

ABSTRACT

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Risk Factors for Influenza A (H7N9) Disease, China, 2013

Abstract Text:

Background: Human infection with novel avian influenza A (H7N9) virus occurred in 12 provinces in mainland China, 2013. From March 31 to Dec 11, a total of 143 confirmed cases were reported, including 47 deaths. From March to April 2013, we conducted a case control study to identify the source of infection, mode of transmission and risk factors for the illness in China.

Methods: We enrolled 89 confirmed H7N9 infection cases in eight provinces in China. For controls, we recruited 340 healthy persons, individually matched to cases by age, sex and neighbourhood. We interviewed both persons in each matched pair within 10 days before case onset about medical history and various exposures to poultry.

Results: 55% (49/89) of cases reported direct or indirect contact with poultry compared with 31% (106/340) of controls (mOR=8.0, 95%CI: 3.3-19.2). Poultry consumption or contact with backyard-raised poultry was not associated with increased risk. 22% (19/88) of cases had contact at home with poultry from market compared with 5% (16/340) of controls (mOR=6.3, 95%CI: 2.9-13.7). Visiting live poultry markets increased risk of infection, even after adjusting for poultry contact and other confounders (aOR=3.5, 95%CI: 1.8-6.8). Among medical history, obesity (aOR=3.7, 95%CI: 1.3-10), chronic obstructive pulmonary disease (aOR=5.0, 95%CI: 1.7-14) and use of immunosuppressive medications (aOR=7.0, 95%CI: 1.1-44) were associated with A (H7N9) disease.

Conclusions: Some host factors were associated with A(H7N9) infection. Contact with poultry from market or exposures to live poultry markets, even without poultry contact, were both risk factors. Live poultry market is the key source of A(H7N9) infection in China. China should consider permanently closing live poultry markets and aggressively pursuing control measures to prevent spread of this emerging pathogen.

Keywords: A(H7N9) Avian Influenza, Risk Factors, Live poultry market, Case-control study

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